Author: <comforts@detox.cr...sgs.gov > at ~internet
Date: 11/3/97 1:02 PM
Priority: Normal
TO: R4RW_MS.STC at 4AT~RWW
Subject: St. Catherine Creek NWR

MANAGER	
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Refuge Personnel:

A few months ago you completed a data call for the USFWS Contaminant Information Management and Analysis System (CIMAS). These data will be included in a 1997 Report to Congress on the status of Contaminants on National Wildlife Refuges.

Based on your response, we are now sending a copy of the data that have been entered in CIMAS for verification. If the information is accurate - no reply is needed. If the information is not accurate, see the instructions in each section regarding how to respond.

Thank you for your efforts.

RECEIVED
NOV 3 1997
ST. CATHERINE CREEK
NATIONAL WILDLIFE REFUGE

****
The following is summary information for:

St. Catherine Creek NWR

****
Section I.

This information has been reviewed and updated by the appropriate EC specialist. If these data are incomplete to your knowledge, contact the EC specialist at your local Ecological Services field office.

Documented Problems -- Source

Mercury -- Other

Other Contaminant Issues -- Source

OC -- Contaminated Sediments

Contaminant Studies (Fiscal year Funded)

AR and MS - Mercury Levels in Animal Tissue from Refuges in the Southeast (1995)
Lower Mississippi River Ecological Study (1997)

Final Reports (Published)

Memorandum to Felsenthal National Wildlife Refuge manager summarizing the findings of a contaminant investigation which addressed mercury levels in animal tissue from the refuge

Memorandum to the manager of St. Catherine Creek National Wildlife Refuge concerning mercury concentrations in fish and raccoons from the refuge

****
Section II.

This information was entered directly into CIMAS at the Mid[illegible]tinent Ecological Science Center [illegible]SC) in Fort Collins, CO.
If there are problems with these data, contact:
Stephanie Comfort (970)226-9372, or stephanie_comfort@usgs.gov
by Novemeber 7, 1997.

County/State

Wilkinson -- Mississippi

USGS Hydrologic Unit (Basin)

8060100 -- LOWER MISSISSIPPI - NATCHEZ

Congressional District

MS04 -- Mike Parker (R)

T&E Species Using Refuge Lands (and Federal Status).
Note: When a species has more than one Federal Status (range dependent), that species name will be listed with each status. The status on the refuge may be noted in the comments in CIMAS. Candidate species are not included.

No information on Threatened and Endangered Species.

Health Consumption Advisories

No listed Consumption Advisories.

Consumption Advisory Details

No Consumption Advisory Details.

Received: from dns by smtp2.irm.r9.fws.gov (ccMail Link to SMTP R8.00.01)
; Mon, 03 Nov 97 13:14:33 -0700
Return-Path: <comforts@detox.cr.usgs.gov>
Received: from smtp2.irm.r9.fws.gov by dns (SMI-8.6/SMI-4.1)
id NAA09707; Mon, 3 Nov 1997 13:16:49 -0700
From: comforts@detox.cr.usgs.gov
Received: from POP3 Client by smtp2.irm.r9.fws.gov (ccMail Link to SMTP R8.00.01)
id AA878587888; Mon, 03 Nov 97 13:14:31 -0700
Message-Id: <9711038785.AA878587888@smtp2.irm.r9.fws.gov>
X-Mailer: ccMail Link to SMTP R8.00.01
Date: Mon, 03 Nov 97 13:02:38 -0700
To: <R4RW_MS.STC@mail.fws.gov>
Subject: St. Catherine Creek NWR
MIME-Version: 1.0
Content-Type: text/plain; charset=US-ASCII
Content-Transfer-Encoding: 7bit

United States Department of the Interior

FISH AND WILDLIFE SERVICE
2524 South Frontage Road, Suite B
Vicksburg, Mississippi 39180-5269

IN REPLY REFER TO:

February 9, 1996

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PL-4.15

RECEIVED
FEB 15 1996
ST. C NE CREEK
NATIONAL WILDLIFE REFUGE

To: Refuge Manager, St. Catherine Creek National Wildlife Refuge, Natchez, Mississippi

From: Field Supervisor, Ecological Services, FWS, Vicksburg, Mississippi

Subject: St. Catherine Creek National Wildlife Refuge (NWR) Contaminant Study

During the summer of 1994, we conducted a contaminant study on the St. Catherine Creek NWR to determine if mercury contamination problems exist on the refuge. Since oil wells occur on the refuge, it was suspected that the refuge may potentially be contaminated with mercury. A total of five adult raccoons were collected with #1.5 leg hold traps from wetland areas that receive drainage from oil wells. We originally tried to catch the raccoons in live traps but were unsuccessful. The raccoons were given codes (RC1, RC2, RC3, RC4, and RC5) for identification purposes. RC1, RC4, and RC5 were males, and RC2 and RC3 were females. Liver, kidney, muscle, and hair tissue were removed from the raccoons, weighed, frozen, and sent to the Research Triangle Institute, Research Triangle Park, North Carolina for mercury analyses. The brain was also removed from each raccoon and preserved in ethyl alcohol solution. The brains will be examined in the future for abnormalities due to exposure to methyl mercury. Total weight of each raccoon was not recorded as the study protocol did not require this information.

We also used our 16 foot direct boom electrofishing boat to collect five adult fish (white crappie) from Butler Lake and Salt Slough. The gender of the fish was not determined as this information was not required by study protocol. Each fish was weighed and then the left and right fillets were removed and later frozen. The left fillets were sent to the Research Triangle Institute for mercury analyses. The right fillets were archived for other possible analyses. We have received the analytical report for the raccoon and fish tissue samples from the laboratory.

The data for the raccoon tissue does not indicate a mercury contamination problem. The mercury levels found in the raccoons (Table 1) are considered to be at or slightly above background (Charles Facemire, Indiana, Personal Communication and Gary Heinz, Patuxent, Maryland, Personal Communication). These levels would not result in acute or chronic effects to the raccoon or pose a threat to a carnivore that regularly preyed upon raccoons. The levels found in muscle tissue is well below the Food and Drug Administration (FDA) action limit of 1 ppm wet weight basis (Kimbrough and Scheuplein 1988) and would not pose a threat to human health.

The mercury concentrations detected in white crappie fillets (Table 2) are considered to be elevated. All of the fish samples contained mercury concentrations above the predator protection level of 0.1 ppm wet weight basis (Eisler 1987), but well below the FDA action limit of 1.0 ppm wet weight basis. These findings indicate that fish eating birds and mammals would be at risk if they ate white crappie from the project area lakes on a frequent basis. However, we believe that these mercury levels in fish are due to biomagnification of naturally occurring mercury levels

along the food chain and do not indicate a mercury contamination problem on the refuge.

The study conducted on the refuge is part of a larger study to examine mercury contamination problems on refuges throughout the southeast and will be included in a report concerning mercury contamination on refuges in the southeast. The report will be prepared by Charles Facemire.

We appreciate Assistant Refuge Manager Harold Morrow's assistance in completing the field work for the study. If you have any questions, contact me or Lloyd Inmon of my staff.

Allan J. Mueller

cc:
Jerry O'Neal, Regional EC Coordinator, FWS, Atlanta, Georgia
Paul Conzelman, EC Specialist, FWS, Lafayette, Louisiana

Literature Cited

Eisler, R. 1987. Mercury hazards to fish, wildlife, and invertebrates: a synoptic review. U.S. Fish and Wildl. Serv. Biol. Rep. 85(1.10). 90 pp.

Kimbrough, R. and R. Scheuplein. 1988. EPA/FDA summary policy statement on chemical residues in fish and shellfish. U.S. Environmental Protection Agency, Washington, D.C.

Table 1. Concentrations (ppm) of mercury in raccoons collected on the St. Catherine Creek NWR, summer1994.

Species	Date Collected	Hair				Kidney				Liver				Muscle			
		Weight (g)	% Moisture	Dry Weight ppm Hg	Wet Weight ppm Hg	Weight (g)	% Moisture	Dry Weight ppm Hg	Wet Weight ppm Hg	Weight (g)	% Moisture	Dry Weight ppm Hg	Wet Weight ppm Hg	Weight (g)	% Moisture	Dry Weight ppm Hg	Wet Weight ppm Hg
RC1	7-22-94	0.77	5.06	1.91	1.82	27.37	73.61	1.64	0.43	129.0	69.20	3.53	1.09	36.49	68.59	0.64	0.20
RC2	7-23-94	5.70	8.32	6.02	5.53	27.15	69.84	3.16	0.95	139.0	69.37	12.71	3.89	22.19	71.88	1.05	0.29
RC3	7-25-94	4.16	9.05	2.12	1.93	28.12	80.01	1.0	0.20	96.0	70.66	1.05	0.31	23.33	73.89	0.31	0.08
RC4	7-26-94	2.95	5.1	2.33	2.46	32.26	77.27	2.66	0.60	155.0	70.83	3.62	1.05	31.69	74.45	0.54	0.14
RC5	7-26-94	3.31	7.88	5.05	4.65	25.01	71.14	2.44	0.70	153	71.17	3.81	1.10	13.2	72.15	0.70	0.19

Table 2. Concentrations (ppm) of mercury in white crappie fillets collected from the St. Catherine Creek NWR, summer 1994.

Species	Date Collected	Whole Body Weight (g)	Weight of Fillet (g)	% Moisture	Wet Weight ppm Hg	Dry Weight ppm Hg
WC1	7-20-94	491.7	63.1	79.94	0.31	1.57
WC2	7-20-94	255.2	30.5	78.48	0.20	0.94
WC3	7-20-94	311.9	29	78.95	0.15	0.69
WC4	7-25-94	311.9	26.4	80.06	0.17	0.83
WC5	7-25-94	283.5	34.5	81.85	0.16	0.90